ABSTRACT

BEVACIZUMAB EFFECT ON EXPRESSION OF COLLAGEN TYPE I AFTER TRABECULECTOMY (EXPERIMENTAL STUDY ON ORYCTOLAGUS CUNICULUS)

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Objective : to determine the effect of bevacizumab as an antifibrotic agent on collagen density, collagen thickness and collagen type I after trabeculectomy in rabbit.

Materials and methods : Sixteen male New Zealand white rabbits divided by two groups, 8 rabbits in control group and 8 rabbits in treatment group. Control group underwent trabeculectomy and injection of balanced salt solution. Treatment group underwent trabeculectomy and subconjunctival injection of bevacizumab (1.25mg, 25mg/mL). They were terminated on 14 postoperative days. Masson Trichrome were performed to evaluate collagen collagen density, collagen thickness. Immunohistochemistry using a monoclonal antibody to collagen type I was performed to evaluate collagen type I expression.

Results : This study showed the density of collagen fibers decreased and statistically significant in the treatment group ($p = 0.075$, $p < 0.05$), whereas the the thickness of collagen fibers did not have a significant decrease in both groups ($p = 0.323$, $p > 0.05$). Expression of type I collagen obtained a decrease in the treatment group compared to BSS group ($p = 0.006$, $p < 0.05$).

Conclusion : Bevacizumab reduces bleb fibrosis by inhibition of angiogenesis and accumulation of extracellular matrix. Postoperative subconjunctival injection of bevacizumab may limiting scar tissue formation at the site of trabeculectomy by blocking collagen synthesis.

Keywords : bevacizumab, trabeculectomy, fibrosis, collagen type I